

**Supplemental Specification
2005 Standard Specification Book**

SECTION 02969

OPTIONAL USE OF RECLAIMED ASPHALT PAVEMENT

Delete Section 02969 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Option to incorporate Reclaimed Asphalt Pavement (RAP) materials into hot mix asphalt pavement, dense-graded material only.

1.2 RELATED SECTIONS

- A. Section 02741: Hot Mix Asphalt (HMA)
- B. Section 02745: Asphalt Materials

1.3 RERERENCES

- A. AASHTO M 320: Performance Graded Asphalt Binder
- B. AASHTO T 164: Quantitative Extraction of Bitumen from Paving Mixtures
- C. AASHTO T 319: Quantitative Extraction and Recovery of Asphalt Binder from Asphalt Mixture
- D. UDOT Materials Manual of Instruction
- E. UDOT Minimum Sampling and Testing Guide

1.4 SUBMITTALS

- A. Quality Control Plan.
 - 1. Submit the proportion of materials from each of the RAP stockpiles intended to be used in the project.
 - 2. Submit the sampling and testing plan for the project.

3. Provide testing by a UDOT Qualified laboratory of the reclaimed material and the total mixture at no additional cost to the Department.
4. Submit to the Engineer for approval.

PART 2 PRODUCTS

2.1 PG BINDER

- A. Select and supply a standard AASHTO M 320 PG Binder meeting the requirements of Section 02745 and Section 509 of the UDOT Minimum Sampling and Testing Guide: Asphalt Binder Quality Management Plan, in accordance to Table 1.

2.2 MIX DESIGN

- A. Obtain Engineer's approval for the use of RAP in the hot mix asphalt.
- B. Use up to 30 percent RAP by total weight in the hot mix asphalt, in accordance to Table 1.
- C. Provide the following for each RAP Stockpile:
 1. Extracted Gradation
 2. Asphalt Content
 3. Saturated - Surface Dry (SSD) Specific Gravity of Extracted Aggregate
- D. Provide the following for the RAP Material combined in proportions for the intended production of HMA:
 1. Performance Grade of recovered asphalt binder.
 - a. Use AASHTO T 164, Method E, with reagent grade Trichloroethylene and AASHTO T 319 to recover the asphalt binder.
 - b. Determine the performance grade of the recovered binder in accordance to AASHTO M 320 with the following modification:
 - 1) Pressure Aging Vessel (PAV) aging is not required before testing for fatigue and low temperature cracking.

- E. Select the percentage of RAP by total weight in the hot mix asphalt and the standard, virgin asphalt binder grade meeting Section 02745, using Table 1:

Table 1

Binder Selection Guidelines and Total Allowable RAP for RAP Mixtures		
Recovered RAP Asphalt Binder Grade	Desired RAP Percent	Recommended Virgin Asphalt Binder Grade
PGXX-22 or lower	< 20 percent	No Change in the Design Grade of the Asphalt Binder
	20 to 30 percent (30 percent maximum)	Select Virgin Binder one grade softer than normal (e.g. select a PG64-34 if a PG70-28 is the design grade*)
PGXX-16	< 15 percent	No Change in the Design Grade of the Asphalt Binder
	15 - 25 percent (25 percent maximum)	Select Virgin Binder one grade softer than normal (e.g. select a PG64-34 if a PG70-28 is the design grade*)
PGXX-10 or higher	< 10 percent	No Change in the Design Grade of the Asphalt Binder
	10 - 15 percent (15 percent maximum)	Select Virgin Binder one grade softer than normal (e.g. select a PG64-34 if a PG70-28 is the design grade*)

* Do not select any grades lower than PG XX-34.

- F. Meet all the requirements of Section 02741.
1. Aggregate Properties of Section 02741 apply to the combined virgin aggregate and RAP aggregate.
- G. Complete the mix design for the combined virgin and RAP materials following design requirements in Section 02741. Use an UDOT qualified laboratory for the design.
- H. Provide the following for the combined virgin and RAP materials:
1. Gradation
 2. Asphalt Binder content
 3. RAP content

PART 3 EXECUTION

3.1 RECLAIMED MATERIAL

- A. Crush or screen the reclaimed material to be used for recycle to pass a 1½ inch sieve.
 - 1. Construct stockpile platforms in such a way to prevent intrusion of subgrade materials into RAP.
 - 2. Provide adequate drainage for the stockpile site.
 - 3. Use separate cold feed bins for each stockpile.
 - 4. Use screened reclaimed material free of organic materials, soil, or other foreign substances.

END OF SECTION